DOCUMENT RESUME

ED 468 613 CE 083 796

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TITLE	Equity in Career and Technical Education. Myths and Realities.
INSTITUTION	ERIC Clearinghouse on Adult, Career, and Vocational Education, Columbus, OH.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO	No-20
PUB DATE	2002-00-00
NOTE	4p.
CONTRACT	ED-99-CO-0013
AVAILABLE FROM	For full text: http://www.ericacve.org/pubs.asp.
PUB TYPE	ERIC Publications (071)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Access to Education; Counseling; Educational Change; Educational Discrimination; Educational Legislation; *Educational Opportunities; Elementary Secondary Education; Enrollment; Equal Education; Federal Legislation; *Females; Graduate Study; Guidance; Males; Nondiscriminatory Education; Nontraditional Occupations; Postsecondary Education; Professional Education; *Salary Wage Differentials; Sex Bias; *Sex Discrimination; Sex Fairness; *Vocational Education
IDENTIFIERS	*Career and Technical Education; Title IX Education Amendments 1972

ABSTRACT

The career and technical education (CTE) system before Title IX of the Education Amendments of 1972 has been characterized as traditionally dominated by gender segregation and discrimination. The most damaging consequence of such gender bias is to limit females' access to the benefits of CTE--the living wage that provides females the same economic self-sufficiency that males have long enjoyed. Thirty years later, there are still striking gender disparities in guidance and counseling practices, CTE program enrollment, level and quality of classes available in traditionally male and traditionally female CTE programs, and wages earned by female and male graduates. In the United States, females continue to out-perform males in reading and writing, and males continue to outperform females in math and science in elementary and secondary grades; enrollment in postsecondary undergraduate and graduate degree programs remains fairly gender traditional; and females are still underrepresented in professional degree programs. Some individual state reports (from Louisiana, Virginia, and New Jersey, for instance) show a certain amount of movement toward gender balance in CTE enrollments. Access to CTE and its benefits is not perfectly equitable but is apparently better than it used to be; efforts to improve access by eliminating gender bias, segregation, and discrimination have not been completely effective, but have had some effect. (Contains 14 references) (YLB)

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MYTHS AND REALITIES
NO. 20

Equity in Career and Technical Education

by Michael E. Wonacott
2002

The 30th anniversary of the enactment of Title IX of the Education Amendments of 1972 seems an appropriate point to review the issue of equity in career and technical education (CTE). Title IX, which required all educational programs receiving federal financial assistance to provide equal opportunities to women and girls, reflected the belief that females could enjoy the same educational opportunities as males if compliance with strict equity requirements were mandated and enforced. But the question arises, Has the belief been realized in education, specifically in CTE? Is equal opportunity for females in CTE a myth or a reality?

Gender Segregation and Discrimination in CTE

The Traditional Reality

The CTE system before Title IX has been characterized as traditionally dominated by gender segregation and discrimination (National Coalition for Women and Girls in Education 2002). In many cases, females were denied entry into training programs for higher-wage, traditionally male, industry and technical occupations. Gender stereotyping in guidance and counseling practices and materials, bias in teacher practices, and harassment by other students discouraged nontraditional enrollment by females and in practice restricted CTE opportunities for females to lower-wage, traditionally female, health and cosmetology occupations. In short, systematic practices and expectations steered females into home economics and away from shop or auto mechanics. In the long run, the most damaging consequence of such gender bias was to limit females' access to the benefits of CTE—the living wage that provides females the same economic self-sufficiency that males have long enjoyed.

The Continuing Reality

Unfortunately, CTE is still characterized by pervasive gender segregation and discrimination (National Women's Law Center 2002). Thirty years later, there are still striking gender disparities in guidance and counseling practices, in CTE program enrollment, in the level and quality of classes available in traditionally male and traditionally female CTE programs, and in the wages earned by female and male CTE graduates. An interesting comparison of two surveys (reported in Gloeckner and Knowlton 1995-96), one in Montana in 1980 and another in Virginia in 1995, illustrates a large, enduring gender gap in a critical CTE program area:

- In Montana in 1980, females accounted for half of enrollment in only *one* high school technical education course—51 percent of Graphic Arts students were female. Female enrollment was less than 10 percent in all other high school technical education courses.
- In Virginia in 1995, only *one* high school technical education course, Communications Technology, had about 50 percent female enrollment. In the 32 remaining high school technical education courses, female enrollment was less than 15 percent in 27 course and less than 10 percent in 17 courses.
- In 1995, Virginia students explained gender differences in terms that could be considered classic for CTE. Females and males both perceived technology education classes as "guy" classes; females perceived technology education classrooms are dirty, hence unfeminine. Remote locations away from the core of the school building; sexist, dehumanizing comments from male students; and the image of technology education classes as academic dumping grounds were all cited by female students as barriers to enrollment.

Other accounts portray similar situations in other areas of CTE and in other places. For example, the numbers of female technology education students, teachers, and teacher educators remain disproportionately low in British Columbia; the disproportion is explained by continued recruiting inequities, a history of gendering in the field, and resistance to gender-specific interventions (Braundy et al. 2000). In computer-related courses, males continue to dominate in such areas as graphic arts and computer-aided design, whereas females enroll disproportionately in clerical and data-entry courses; females also lag behind males in taking the advanced placement computer science exam and in recreational and elective use of computers in school (Weinman and Haag 1999). University undergraduate graduate family and consumer sciences programs as a whole remain predominantly female (Firebaugh and Miller 2000). A number of states report continuing, pronounced gender imbalances, reflecting traditional occupational gendering, in secondary or adult CTE programs (*Gender Equity in New Jersey* 1996; Hargroder 1998; Silverman 1999; *South Carolina Occupational Education* 1995):

- Numerous technology education programs remain heavily male dominated—engineering technology, precision production trades, automotive technology, mechanics and repairers, and computer information sciences, for example. Construction trades typically still have the lowest female enrollments.
- Agriculture is still a male-dominated program area.
- Secondary business and health occupations remain female dominated.
- Secondary home economics remains heavily female dominated.

A Larger Reality

Furthermore, disparities between the genders are not confined to CTE in the United States. In the U.S., females continue to outperform males in reading and writing and males continue to outperform females in math and science in elementary and secondary grades; enrollment in postsecondary undergraduate and graduate degree programs remains fairly gender traditional; and females are still underrepresented in professional degree programs (Bae et al. 2000). And in at least some other cultures and nations, females and males tend to prepare for and enter occupations in very gender-traditional patterns. In Australia, females are still clustered in a relatively narrow range of vocational education and training programs and a small set of lower-paid occupations in health and community services, for example (Australian National Training Authority 1996). A study comparing American and Finnish students (Burge and Stenström 1995) found that in both nations, females typically chose jobs that involved service and caring and the realm of human life, whereas males most likely chose branches of industry that involved the production of goods. A study of 10 countries (Argentina, India, Mexico, Republic of Korea, South Africa, Spain, Sweden, Turkey, United Arab Emirates, and Zambia) found that enduring social and cultural attitudes toward women's role create a gap between policy and practice in providing equal opportunity and access for females through vocational guidance (Miller and Vetter 1996).

Progress toward Gender Equity in CTE

Nevertheless, there is evidence that some change has occurred in access to CTE programs. For example, females received 85% of all bachelor's degrees in family and consumer sciences (from the 10 postsecondary institutions with the highest enrollment), but some specific programs attract a more gender-balanced mix of students (Firebaugh and Miller 2000):

- Programs that provide career options associated with business and industry, such as hospitality or food service systems management
- Programs with a strong biological base leading to professional fields like medicine (e.g., a Human Biology, Health, and Society program)
- Newly developed programs that lead to professional fields like law (e.g., policy analysis and management)

Similarly, there is a glimmer of change even in the comparison of technology education in Montana in 1980 and in Virginia in 1995 (Gloeckner and Knowlton 1995-96). Females accounted for less than 10 percent of 1980 Montana enrollments in every course except one; 15 years later in Virginia, females enrollments were less than 10 percent in only 17 of 32 courses.

Likewise, some individual state reports show a certain amount of movement toward gender balance in CTE enrollments. Between 1992 and 1995, enrollment in New Jersey secondary occupational programs became more gender balanced in business management/administrative services, computer/information sciences, marketing operations/distribution, and vocational home economics; enrollments in adult programs became more gender-balanced in business management/administrative services, computer/information sciences, health professions/related sciences, and marketing operations/distribution (*Gender Equity in New Jersey* 1996). In Louisiana, gender-nontraditional enrollment had risen somewhat from 24.4 percent of all enrollments in 1990-91 to 26.5 percent in 1995-96; females accounted for 14.7 percent of all 1996-97 enrollments in technology education, the highest rate among the 6 program years reported but still below the desired 25 percent rate to achieve gender balance (Hargroder 1998).

Conclusion: An Open Question

So, has there been an increase in equitable access to CTE programs and the benefits they can provide? It is difficult to draw firm conclusions, one way or another, from the literature. On the one hand, there is persuasive evidence that gender bias, gender segregation, and gender discrimination still exist and still have a baneful effect on access. For example, four predominantly female vocational high schools in one city offered an average of 1.75 advanced placement courses per school; for 11 predominantly male schools in the same city, the average was 3.89 courses (NCWGE 2002). And women in nontraditional jobs constituted only 12 percent of working females, in spite of the great disparities between nontraditional and traditional jobs for females (ibid.). However, to say that bias, segregation, and discrimination exist is one thing; to say whether those are on the increase or on the decrease is quite different. Some data indicate, for example, that there is movement toward greater gender balance in some CTE program enrollments, hence more equitable access to CTE programs. However, those data are partial, reflecting program enrollments in only certain states and may not reflect the situation in other states.

Unfortunately, comprehensive nationwide data typically do not specifically address CTE programs and effects (e.g., Bae et al. 2000). For example, in 1970, the median annual earnings of female high school graduates were only 50 percent of males' earnings; those of female bachelor's degree holders, only 57 percent of males' earnings; by 1997, those disparities had been reduced to 64 percent and 78 percent, respectively, at the two levels. So although disparities still exist, earnings appear to be less unequal than formerly—but the data presented allow conclusions only on the effects of education in general, not on the effects of CTE in particular.

Similarly, discussions about how to achieve more equitable access typically appear very logical; on the face of it, it makes sense to call for full implementation of Title IX requirements for issuing federal programs or for the return to the previous Perkins Act requirement and funding for full-time state sex equity coordinators (NCWGE 2002; NWLC 2002). On the other hand, it could be said that previous legislative and regulatory requirements have fallen far short of producing genuinely equitable access, across the board, to CTE programs and to the benefits they can provide. All in all, it appears that we can say this: In reality, access to CTE and to its benefits is not perfectly equitable—but it is apparently better than it used to be; efforts to improve access by eliminating gender bias, segregation, and discrimination have not been completely effective—but they have presumably had some effect. Perhaps the reality is that gender bias, segregation, and discrimination will always be a danger in CTE; efforts to combat and eliminate them will always be needed; attention to equal access for all will always be in order.

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This project has been funded at least in part with Federal funds from the U.S. Department of Education under Contract No. ED-99-CO-0013. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. ***Myths and Realities*** may be freely reproduced and are available at <http://ericacve.org/mr.asp>.

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